



The newsletter of the Society of Australian Systematic Biologists.

Issue 8 (December 2012)

## Editorial

When meeting people or talking to acquaintances, I frequently find it difficult to convince them that research into the taxonomy and systematics of my focal taxon is a worthwhile thing to do. I expect that I am not alone in this experience. Lately, I've been coming to the conclusion that the general public find it easier to appreciate beauty than knowledge, and have been wondering how we could use the world of art to communicate our passion for our taxa and the importance of our research.

It just so happens that in this issue of the newsletter, we have three articles which portray different ways of communicating in this manner. David Morrison's review of *Trees of Life*, the forthcoming animated movie of the Lord Howe stick insect *Sticky*, and my discussion on using Flickr for finding images of Australian biota. Each of these articles delight in a different aspect of systematic research and shows how that delight may be shared in a way that may reach a broader range of people than traditional scientific outputs. Traditional forms will remain the standard method of scientific discourse, but there is a lot of potential to be as creative in our communication as in our research.

*Samuel Brown*

### In this issue:

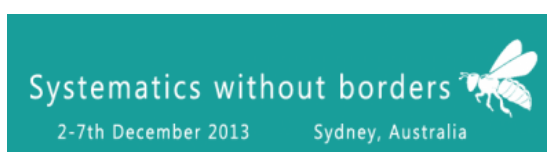
Editorial .....	1
IBCC announcement .....	1
Book review .....	2
Taxonomic Workshops & Conference ..	9
Stick Insect Cartoon .....	10
Photographs on Flickr .....	10
PG Training Workshop .....	14
Job vacancies .....	14
About the Society .....	15

## Systematics without Borders

A combined conference of the Society of Australian Systematic Biologists, Invertebrate Biodiversity & Conservation, and the Australasian Systematic Botany Society

**1–6 December 2013, Sydney, New South Wales, Australia**

We are now working in the golden age of systematics. Major phylogenetic questions across the tree of life that seemed unanswerable only a couple of decades ago have



yielded to analysis. Our task of reconstructing organismal phylogeny down to species level is still daunting but is beginning to look achievable. Biologists of all stripes are using phylogenies and classifications as frameworks for combining and comparing information in novel ways that few systematists anticipated. The *Systematics without Borders* conference will provide a forum for systematists and other biologists to present the results of their research and to explore the possibilities for collaborating further in the age of integrative biology.

### **Program**

The conference will run from Sunday 1 to Friday 6 December 2013 and will include plenaries, themed concurrent sessions and posters. Post-conference field trips and collection visits to local museums and herbaria are also planned.

### **Symposia, contributed papers and posters**

Expressions of interest from potential participants are now invited as are ideas for symposia of 3–4 talks each (see <http://www.systematics2013.org/expression-of-interest/>). In line with the conference theme, the organizers wish to encourage contributions that reflect the integration of systematics with other biological disciplines.

For more information and to register your interest, please visit the conference website: <http://www.systematics2013.org/>

*Shane Ahyong*

### **Pictorial History: A review of *Trees of Life* by Theodore Pietsch**

*Trees of Life: A Visual History of Evolution*. Theodore W. Pietsch. The Johns Hopkins University Press, Baltimore. ISBN 978-1-4214-0479-0 (hardcover) xiii + 359 pp. \$AU92.

This is a fascinating book. Almost the whole history of systematics is laid out in pictures. It is a treasure trove for anyone who is interested in the history of human thoughts about how to pictorially represent biological relationships; and let's face it, all systematists are historians at heart. So, do your favourite systematist a real favour and buy them a copy of this book sooner rather than later (they cannot afford the price for themselves).

There have been a number of publications discussing the iconography used by evolutionary biologists and its effect on their work (Brace 1981; Stevens 1984; O'Hara 1992; Stevens 1994; Clark 2001; Ragan 2009; Gontier 2011; Tassy 2011). These papers outweigh Ted Pietsch's book in words, but they pale into insignificance when it comes to pictures. There are 230 of them in this book, of all shapes and sizes, representing relationships based on similarity, genealogy or some unspecified form of affinity. Most of them are trees of some sort, but there are also scales, keys, maps and sets. Biologists are ingenious folk, and this book shows you just how ingenious they have been, and in many cases how artistic as well.

The book's blurb claims that "Pietsch has spent decades collecting and researching" for his book, and I can well believe it. The book is arranged roughly in chronological order (1305–2005), and the book tries to illustrate some of the key trends in the history of systematics. It does not always succeed at the latter, as I will elaborate below, but this is a relatively minor quibble. Pietsch provides a brief contextual introduction to each chapter, providing the relevant historical and intellectual background. However, he wisely lets the pictures speak for themselves whenever they can.

Most of the diagrams are very well presented and remarkably clear. I have seen scanned copies of many of the originals (they are available in various repositories on the web, notably Gallica, Google Books, and the Biodiversity Heritage Library), and these are often very poor, as are many of the copies included in other published collections. Therefore, considerable work has been put into cleaning these scans for this book, or making new ones, for which we should be very grateful.

All of the figures are in black and white, although there are colourized versions known of some of the originals (and colour often helps with their comprehension). In most cases the original illustration is presented, but for two of Darwin's unpublished figures later typeset versions are used (Figures 61 & 63), and Figure 63 does not match Darwin's hand-drawn original (see Morrison 2012g). (Pietsch is simply following precedent here, as both published editions of Darwin's correspondence use typeset versions of his figures rather than the manuscript originals.)

Abstract trees were applied first as tools to arrange knowledge and ideas, and from there they were adopted to illustrate relationships among taxa (cf. individuals), notably by Bonnet (in 1764) and Pallas (in 1766). They are complex icons, at least as compared to a chain (eg. the Scala Naturae). As Baum & Smith (2012) have recently noted: "we have learned from working with thousands of students that, without contrary training, people tend to have a one-dimensional and progressive view of evolution. We tend to tell evolution as a story with a beginning, a middle, and an end. Against that backdrop, phylogenetic trees are challenging; they are not linear but branching and fractal, with one beginning and many equally valid ends. Tree thinking is, in short, counterintuitive."

In this context, Pietsch's book is an important one. It shows, on the one hand, just how complex trees can be, and on the other hand it shows just how comprehensible biodiversity can become once we try to organize our thoughts in some rational way. A phylogenetic tree is a metaphor, and we use this metaphor to provide a pictorial representation of our ideas regarding biological relationships. The history of tree iconography is thus the history of systematic thought. More to the point, the future of these trees is the future of systematic thought—we will change our iconography as we change our ideas.

Just as importantly, the tree metaphor provides a quantitative connection between biology and mathematics. Graph theory is a well-developed branch of mathematics, and the tree metaphor connects very well with acyclic line graphs (see Morrison 2012a). This has allowed us to develop objective and repeatable methods for producing trees from phenotypic and genotypic data, thus linking systematics to mainstream scientific activity. Literally, without trees systematics is natural history rather than science. The development of the tree metaphor thus plays a double role in systematics: both as a representation and as an analytical tool. Pietsch's historical compendium neatly summarizes and illustrates this duality.

I have recently spent some time investigating the history of phylogenetic networks (as opposed to phylogenetic trees), and so I feel currently (perhaps temporarily!) competent to comment on some of what I see as the important points that Pietsch makes about changing systematic iconography.

The relationship between dichotomous keys and classifications is mentioned at the beginning of the book. Any key can be treated as a classification system, although not all classifications are easy to represent as keys. However, a key presupposes a classification rather than being one itself—we create a classification of the specimens first, and then afterwards create a key to allow identification of new specimens. There needs to be no simple relationship between the classification and the key, as the former is theoretical and the latter practical.

To me, one of the better illustrations of the potential confusion is the continued treatment of Carl von Linné's plant "sexual system" as a classification, in spite of the fact that he clearly labelled its presentation (Linnaeus 1735) as "*Clavis Systematis Sexualis*" [Key to the Sexual System]. Linné used this system to file away his specimens, both literally in his specimen cabinet and metaphorically in his mind. He knew exactly where to put any new specimen and exactly where to find his old ones. This is an index rather than a classification. He saw his own ability to create an efficient information storage and retrieval system (in modern parlance) as his greatest strength; he was an organizer of knowledge rather than an innovator of ideas.

Moreover, he was perfectly well aware that biological relationships are much more complex than his simple index indicated. Pietsch illustrates this (his Figure 16, Figure 1 here) with the *Mappam Affinitatum Genealogico-Geographicam* that Paul Giseke appended to Linné (1792). Linné's Aphorism 77 (Linnaeus 1751) had previously specified that: "*Plantae omnes utrinque affinitatem monstrant, uti Territorium in Mappa geographica*" [All plants show affinities on either side, like territories in a geographical map]; and the published map illustrates the natural orders described in Linnaeus (1751).

The important diagrams of both Buffon (Figure 17) and Duchesne (Figure 20) are represented in Pietsch's book, as these appear to be the first known illustrations of explicitly genealogical relationships among groups of organisms, albeit these are intra-species relationships (see Morrison 2012b, 2012c). Interestingly, both diagrams illustrate hybridization (in dogs and strawberries, respectively), thus making them also the first reticulating networks rather than simple trees.

Charles Darwin actually used a combined metaphor in his most famous publication (Morrison 2012i). The idea of using a tree as an icon to represent time is usually credited to the mystic Joachim of Fiore, in his *Liber Figurarum* of 1202. Darwin combined this idea with the Tree of Life (ie. immortality), which was originally a biblical image, being contrasted with the Tree of Knowledge (of good and evil) from which Eve and Adam ate the forbidden fruit. According to some scholars, these are in fact two names for the same tree, both being forms of the World Tree that has existed in many cultures (Cook 1974).

Six of the ten tree-like sketches known among Darwin's manuscripts and letters are illustrated by Pietsch (the complete set is shown in Morrison 2012f, 2012g), as is his one and only published tree (a theoretical one). Darwin is usually considered to be the first to explicitly use a tree as a simile for genealogical history in the modern sense (ie. contemporary taxa at the leaves, inferred ancestors at the nodes). Lamarck's earlier



Pietsch then moves on to Ernst Haeckel, who is usually credited with providing the first empirical phylogenetic trees in the modern sense, in 1866 (all eight trees from *Generelle Morphologie der Organismen* are included by Pietsch). However, Haeckel's tree-construction method seems to have owed more to Lamarck than to Darwin, as his diagrams basically illustrated morphoclines (see Dayrat 2003). This is most obvious in his famous Tree of Man (Pietsch's Figure 82, Figure 2 here), which looks very much like the Scala Naturae but with some of the species moved from the main trunk to short side-branches.

Moreover, it was apparently St George Mivart who published the first known empirical tree in 1865, followed by Franz Hilgendorf in 1866, and Albert Gaudry in 1866 (Bigoni & Barsanti 2011; Tassy 2011). Unfortunately, none of these trees are included by Pietsch. However, they are discussed and illustrated by Morrison (2012h).

St George Mivart's (1865, 1867) trees are doubly important because they are the first to depict humans as not being the pinnacle of creation but simply as part of the primate family tree, as well as being trees based on carefully homologized phenotypic data (osteology of the vertebral column, and measures and proportions of all appendicular bones, respectively). Pietsch incorrectly attributes this insight to both Darwin (p. 88) in 1868, who must surely have known of Mivart's works, and also to Haeckel (p. 98) in 1866, who probably did not know; and, besides, Huxley (1863) had already considered the question even though he did not draw a tree. (Note: Darwin signed Mivart's 1867 request for admission to the Royal Society, and the 1867 paper was used in support of that application; Bigoni & Barsanti 2011.)

The most visually strong phylogenetic trees of the 20th century were drawn by William King Gregory, and Pietsch justifiably devotes more space in the book to him than to anyone else (Figures 157–173). Gregory was an artist by disposition as well as a comparative zoologist, and most of his trees included drawings of the organisms concerned (an innovation attributed by Pietsch to Benjamin Gruenberg in 1919). More importantly, Gregory was usually concerned about the time dimension of his trees, which was then included in the diagrams in some way. He was also the most prolific popularizer of trees known, although it must be admitted that some of his trees seem to contain almost no actual phylogenetic information (eg. Figure 166).

As an aside, I've sometimes wondered why Ernst Haeckel himself never drew organisms on his trees. He had two passions in life: art and science (he saw the universe as an infinite unfolding work of art, and a scientist's job was to portray it with both accuracy and passion). He could have satisfied both of these desires with his trees. It thus seems contradictory that his trees became more stick-like through time (as illustrated by Pietsch) rather than becoming more artistic. Thus, we are left to marvel at his immaculate sketches and paintings (Haeckel 1904) independently of his trees.

Willi Hennig has several of his theoretical diagrams illustrated in the book (Pietsch's Figures 190-192), which is mandatory, but there is nothing from Herb Wagner, whose groundplan-divergence method for reconstructing phylogeny anticipated Hennig's approach (Wagner 1961). Zuckerdahl & Pauling's pioneering molecular tree from 1965 is included (Figure 198), along with those of other originators of molecular phylogeny (eg. Fitch, Goodman, Sarich, Sibley, Woese), although the initial sequence-based work of Morris Kreitman (1983) is sadly absent. Clearly, Pietsch's book could easily have been much bigger than it is.



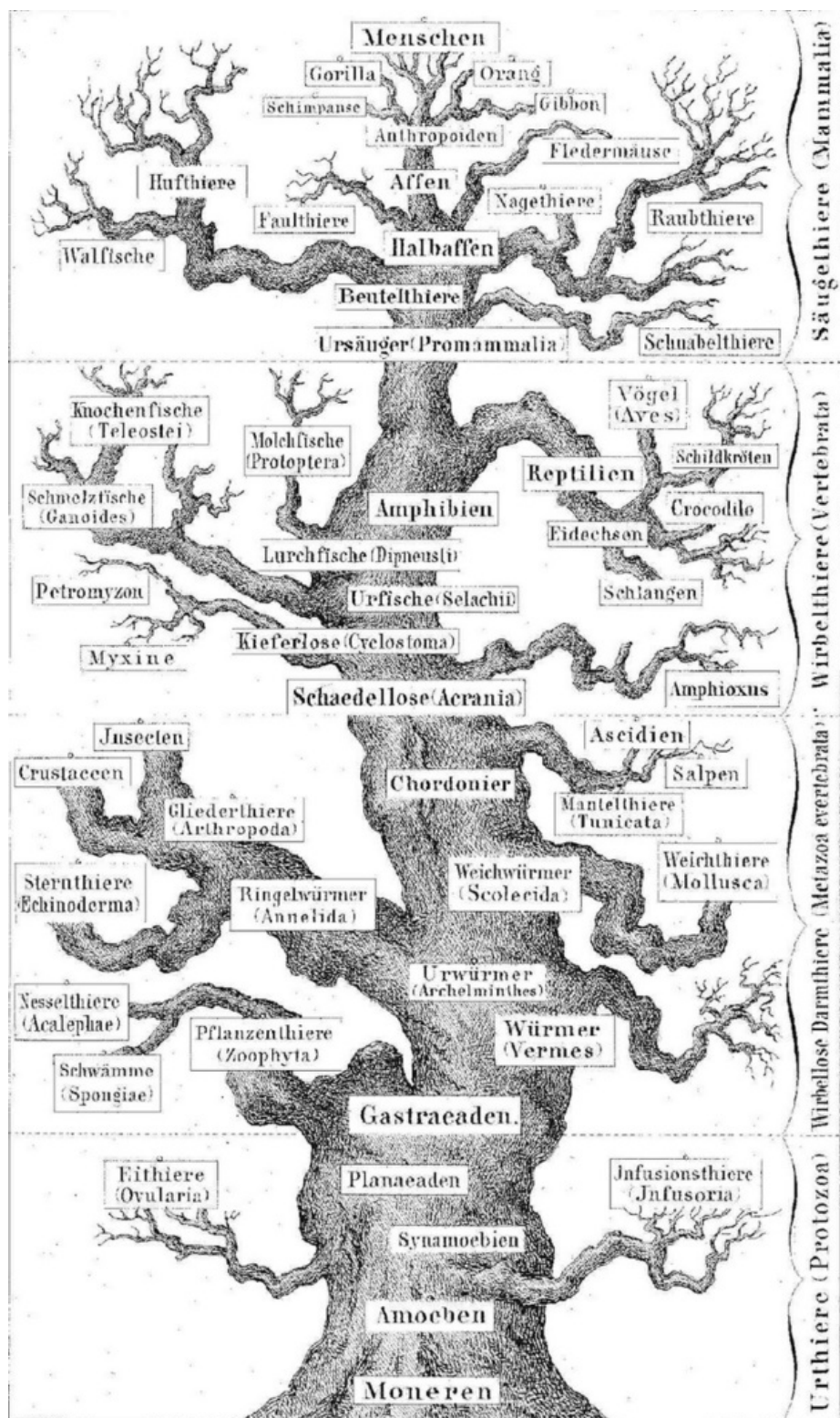


Figure 2. Haeckel's 1874 Tree of Man.

If I was to make one general complaint about the book it would be the relative lack of network illustrations. Historically, there were quite a number of these between 1760 and 1960, as discussed (and illustrated) by Morrison (2012d, 2012e); and it looks very much like there will be many additional ones in the future, especially in botany (where reticulation is caused by hybridization) and bacteriology (where it is caused by horizontal gene transfer). So, Pietsch may have missed a good bet by not including more networks, along with some pertinent comments about the future. Nevertheless, the book does include a selection of the numerous “webs, nets, maps, or other basically horizontal, planar, reticulating structures” (Stevens 1984) produced by biologists over the years.

Every time I dip into this book I find something new: every time I look at one of the pictures I find an interesting new feature, or gain a new insight into what the originator was trying to communicate. I may well have learned more about systematics from this one book than from anything else I have ever read. What good this will do me I don't know, but it has been a hell of a lot of fun. I hope that you get to enjoy the book for yourselves.

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## Polychaete conference and general taxonomic workshops

### Australian Museum, Sydney, July–August 2013

In July and August 2013 the Australian Museum Sydney, will be hosting the 11th International Polychaete Conference and several associated taxonomic workshops which are likely to be of interest to members of the Society of Australian Systematic Biologists. Please note that the workshops have a lower class limit and will not be held if numbers do not exceed this.

The **11th International Polychaete Conference** will take place on 4–9 August 2013 with program themes including ecology, evolutionary biology, phylogeny and reproduction of polychaete worms. Keynote speakers and their topics include Dr Jim Gehling (evidence for ancestors of modern protostomes among the Ediacara fauna), Prof. Damhnait McHugh (current understanding of annelid evolutionary relationships), Dr Günther Purschke (a morphological perspective on annelid systematic and evolution) and Prof. Pei-Yuan Qian (molecular mechanisms of larval attachment and metamorphosis). The conference website (<http://www.ipc2013.com.au/>) is now open for registrations and submission of poster and oral presentations. Early registrations close 31 March 2013. Three pre-conference workshops will take place in the week preceding the conference and are not restricted to those attending the Polychaete Conference:

On Monday 29 July to Friday 2 August 2013 Dr Kirk Fitzhugh (Natural History Museum of Los Angeles County) will present a course on the **Philosophy of Biological Systematics**. This one week course offers a unique opportunity for participants to acquire an understanding of the philosophical and scientific foundations necessary for systematics practice, and will provide clear-cut guidelines for how to critically assess the worthiness of methods. Details of the topics to be covered are provided under the link “Pre-Conf Workshops” at <http://www.ipc2013.com.au/>. Course notes will be made available as pdf files with associated notes.

On 1–2 August 2013 Dr Pat Hutchings, Dr Elena Kupriyanova, Dr Robin Wilson and visiting international and Australian specialists to the Polychaete Conference will present a workshop on **Identification of Invasive Polychaetes**. This course is designed for environmental consultants, fisheries staff, quarantine officers and port authority officers and will have a particular focus on those polychaetes families which have been most often introduced to Australia: Sabellidae, Serpulidae and Spionidae. Each participant will receive a book with detailed pictorial keys to introduced species and closely related native species, as well as illustrated descriptions of each of the listed introduced species and those listed as potential invasives. Participants will be shown the

techniques needed to examine the diagnostic characters and photograph the specimens for future reference.

On Saturday 3 August, Sue Lindsay of the Microscopy and Microanalysis Unit at the Australian Museum will present a **Workshop on microscope photography and preparation of material for SEM**. Equipment available includes: A Zeiss LS15 SEM, Olympus BX50 with Spot CCD and auto-montage software, Leica MZ16 with Spot CCD and auto-montage software and the Visionary Digital Microoptics Microscope System. The Microscopy and Microanalysis Unit specialises in morphological interpretation and analysis with the production of images for both scientific publication and non-scientific uses and the course material will be tailored for these purposes and the needs of course participants.

Registration is now open. Further details of the above conference and workshops, including registration costs, key dates and information about accommodation options and other activities in Sydney can be found at <http://www.ipc2013.com.au/>

*Robin Wilson*

### ***Sticky: Animated movie of the Lord Howe stick insect***

The Lord Howe stick insects (*Dryococelus australis*), also known as the Lord Howe land lobster is a spectacular creature. Thought to be extinct, it was rediscovered in 2001 on Ball's Pyramid, a spectacular rock stack off the coast of Lord Howe Island. It has a story worthy of being told, and it is the subject of an animated documentary that is due for release next year. The director of the movie, Jilli Rose, has this to say about it:

One of our aims with the film is to create an emotional connection between people and this magnificent insect. It's a perfect scrappy hero, its story reads like a fairy tale. It seems that many people find it hard to care about the conservation of species which are not traditionally thought of as cute or cuddly, and with this astonishing true story we feel we have a shot at changing that for many of our viewers.

Our film is heartwarming, funny, engaging, beautiful, lively, colourful and hopeful.

The movie is due for release in March 2013, but needs a little financial assistance to help it on its way. To find out more about the movie and to contribute to its success, please visit its website: <http://www.bespokeanimation.com/>

*Samuel Brown*

### **Australasian Wildlife photographers on Flickr**

The advent of digital cameras has revolutionised photography. In addition to making it much easier and cheaper to take photos, it has also made distribution of photos a breeze, thanks to the internet. Flickr is the world's most popular photo-sharing website, and as such is an excellent way to find beautiful images of your favorite taxon. One of the useful features of Flickr is that the license of the image is made explicit, whether it be under copyright or the various Creative Commons licenses. This allows people to know exactly whether they have the right to use the image in the desired context.



Kangaroo Island Conesticks (*Petrophile multisecta*). Photograph by Arthur Chapman.  
License: CC: BY-NC-SA. [Arthur Chapman Flickr page](#).

## Searching

The main way to find images is to search using keywords. The **basic** search returns all media that match the keywords. These results can be limited by license or content type using the **advanced** search tool.

If you find yourself searching for the same options regularly, Flickr's image search URL structure is fairly intuitive, and can be used easily for rapid searches. For example, the URL to search for Creative Commons licensed images of Sturt's Desert Pea (*Swainsona formosa*) is [http://www.flickr.com/search/?q=Swainsona formosa&l=cc](http://www.flickr.com/search/?q=Swainsona+formosa&l=cc). Other subjects can be found by using other keywords after the q= option.

## People

Flickr users have their photos stored in what is known as their photostream. This contains all their photos, usually sorted by date, with their most recent appearing first. Following productive photographers who share your interests can be a useful way to obtain images/ideas.

The following are a few photostreams that are likely to be of particular interest to *Banksia* readers:

**Arthur Chapman** ([http://www.flickr.com/photos/arthur\\_chapman/](http://www.flickr.com/photos/arthur_chapman/)) Arthur is based in Victoria, but has travelled widely within and outside of Australia. His photographic interests are broad, with insects, plants and birds being particularly well represented. He



Polkadot jumping spider (*Opisthoncus polyphemus*). Photograph copyright Bryce McQuillan. Used with permission. [Bryce McQuillan Flickr page](#).

has released his photos under the Creative Commons Attribution-Non Commercial-Share Alike license.

**Bryce McQuillan** (<http://www.flickr.com/photos/spidermanbryce2006/>) Bryce is based in New Zealand. His primary photographic interest is macro photography of invertebrates in their environment, and has a special focus on spiders. He has reserved all rights to his photos.

**Bill and Mark Bell** (<http://www.flickr.com/photos/48991563@N06/>) The Bells are based in Western Australia. They are natural history photographers in the wide sense, with subjects ranging from plants to invertebrates, fish and birds, to fossils. They've released their photos under the Creative Commons Attribution-Non Commercial-Share Alike license.

**Biodiversity Heritage Library** (<http://www.flickr.com/photos/biodivlibrary/>) The Biodiversity Heritage Library is an initiative to scan and make freely available online copies of all heritage scientific literature. As part of this effort, they've created a Flickr site to share some of the stunning artwork that accompanied these old books and papers. Unfortunately, the pictures are not well indexed making it difficult to find specific images. However, it's a wonderful place to browse through and enjoy the images. Pictures are licensed under the Creative Commons Attribution-Non Commercial-Share Alike license.





Milkmaids (*Burchardia congesta*). Photograph by Bill and Mark Bell. License: CC: BY-NC-SA. [Bill and Mark Bell Flickr page](#).



Platypus (*Ornithorhynchus anatinus*). Published in Arcana, or, The museum of natural history, 1811. License: CC: BY-NC-SA. [Biodiversity Heritage Library Flickr page](#).



## Groups

A final way to find relevant photos on Flickr is to the groups that have been created. Flickr groups are formed by a number of photographers pooling their images together. Groups can be based on themes, such as [Australian flowers, plants and trees](#) and the [Field Guide to Insects of Australia](#), or on locations, such as the [Australian National Botanic Gardens](#). As part of their social media exposures, some organisations have Flickr groups, including the [Australian Museum](#), and [Australian Geographic](#).

*Samuel Brown*

## Advance Announcement: 3rd National Systematics Postgraduate Workshop

**17–21 June 2013, University of Adelaide**

This workshop offers advanced level training in phylogenetic methods, imaging techniques, barcoding, systematics theory, nomenclature and the taxonomic process, collection management, databases, publishing results, finding a job, and much more.

More details to come in February 2013.

*Andy Austin*

## Four positions in systematics at CSIRO

Location: Canberra, Australia

Salary: \$89K–\$120K plus up to 15.4% superannuation

Pre-requisite: PhD and extensive postdoctoral experience in a relevant field

Tenure: Indefinite

The Australian National Biological Collections Facility (ANBCF) within CSIRO comprises the Australian National Wildlife Collection (ANWC), Australian National Insect Collection (ANIC), Australian National Herbarium (ANH) and other national collections (including fish, algal, seed and wood collections). As part of an integrated build in national capability in molecular systematics and evolutionary research, we are currently seeking four positions across ANBCF.

### **ACT12/03557—Invertebrate Molecular Systematics**

This is an opportunity for a molecular systematist with a special interest in insects and genomics to make a substantial contribution to the Australian National Insect Collection (ANIC), the largest and most significant collection of Australian insects in the world. It is housed in CSIRO's Ecosystem Sciences, which also conducts research on many other aspects of insect biology (e.g., ecology, biocontrol, biosecurity and insects as model genomic systems). The appointee will be expected to use molecular data in research on the systematics and evolutionary biology of insects. They will have research strengths in phylogeny, systematics, and biogeography in the context of Australian insects. Their taxon focus will preferably be on the ANIC's collection strengths of beetles (Coleoptera), moths and butterflies (Lepidoptera), flies (Diptera) or ants and

wasps (Hymenoptera). The appointee will be expected to interact with colleagues to more fully integrate molecular data and analyses into ongoing research projects.

#### **ACT12/03558—Vertebrate Systematics and Collections**

The appointee will be expected to lead in CSIRO's embracing of genomics in evolutionary biology as applied to natural populations of vertebrates. They will work at the intersection of phylogeny and adaptation, systematics and population genetics, biogeography and phylogeography especially as applied in the context of Australo-Papuan vertebrates. Their focus will be on the ANWC's vertebrate collections (especially birds and mammals) but developing capacity in any terrestrial vertebrate group would be encouraged. The appointee will be expected to develop a field program that will contribute to growth of the collections.

#### **ACT12/04633—Plant Molecular Systematics and Evolutionary Genomics (× 2)**

We are seeking to appoint two early to mid-career scientists with interests in undertaking research on the Australian Flora in the areas of molecular systematics, evolutionary genomics and phylogeography. A solid grounding in collections-based science is still seen as essential to this work. The positions are based at the Australian National Herbarium within the CSIRO's Division of Plant Industry, which also conducts research on many other aspects of plant biology (e.g. ecology, developmental biology, crop breeding, molecular biology and genomics). The Australian National Herbarium is a component of a joint venture in biodiversity science between CSIRO and the Federal Department of Sustainability, Environment, Water, Populations and Communities, through the Australian National Botanic Gardens.

For further information and to apply online for the above positions please visit our website at [CSIRO Careers](#), choose “[Jobs Search](#)” and insert the Job Reference Number where indicated.

Applications close at 11.30pm (EST) on 30 January 2013.

## **About the Society**

### **SASB Officers:**

Steve Cooper (President)  
[Steve.Cooper@samuseum.sa.gov.au](mailto:Steve.Cooper@samuseum.sa.gov.au)  
Penny Mills (Vice-President)  
Andrew Thornhill (Secretary)  
[andrew.thornhill@anu.edu.au](mailto:andrew.thornhill@anu.edu.au)  
Andy Austin  
Catherine Byrne  
Lyn Cook  
Laxmikant Dama  
Bob Mesibov  
Andrew Mitchell  
Kevin Thiele

Samuel Brown (Newsletter Editor,  
non-executive position)  
[sam.brown@lincoln.ac.nz](mailto:sam.brown@lincoln.ac.nz)

### **The Society:**

The Society of Australian Systematic Biologists is open to all people who utilise the science of biological systematics as a basis for the study and understanding of nature. The Society is a non-profit inter-disciplinary organisation whose purposes are to promote the scientific study of biological systematics and to disseminate scientific and educational information related to its fields of interests.

### **Membership:**

Membership is free. Details are available on the society website (<http://www.sasb.org.au/contacts.html>) and from the secretary.